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ABSTRACT

The report describes a special program at the University of Rochester (New York) which annually offers up to 20 students a tuition-free fifth year of education. The program is intended to allow students to study subjects distant from the requirements of their concentrations. Students present their intellectual ambitions in an application process and are admitted during their second or third year of college, allowing them time to integrate the extra year of courses into their educational planning. Participants are pleased to have the additional time, and faculty endorse the option. The program is particularly attractive to students preparing for scientific and engineering professions where degree requirements leave little time for electives. In the program's 3-year history, 73 applications (out of 160) have been accepted. Thirty-two students have completed their programs and graduated; six have withdrawn; and 35 are still in the process. Male participants predominate. Proposed programs of study must further general educational and not vocational goals; they must be spread throughout the third, fourth, and fifth years; they must have a theme; they must include at least four courses above the introductory level; and they cannot include courses within the student's concentration. A brochure about the program answering common questions is included with the report. (DB)

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UNIVERSITY OF ROCHESTER
Office of the Provost
200 Administration Building
Rochester, New York 14627

Grant No: G008642159

Project Dates:

Starting Date: September 15, 1986
Ending Date: September 30, 1989
Number of months: 36

Project Director:

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University of Rochester
200 Administration Building
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FIPSE Program Officer(s): Ed Goldin

Grant Award:

Year 1	$15,646
Year 2	$11,680
Year 3	$10,404
Total	$37,730

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SUMMARY - TAKE FIVE

The University of Rochester annually offers to up to twenty students a tuition-free fifth year of education. With five years to earn an undergraduate degree, students can select courses in many disciplines and study subjects distant from the requirements of their concentrations. The program is particularly attractive to students who are preparing for the scientific and engineering professions where degree requirements often leave students few spaces for electives. Students sketch their intellectual ambitions in an application process and are admitted during their second or third year of college, which then allows them the time to integrate their "new" with their "standard" courses in the remaining years for a well-balanced and broad education. So far participants are pleased to have the additional time, faculty endorse the option, and the program has received favorable national publicity.

Ruth Freeman
University Dean and Associate Provost
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EXECUTIVE SUMMARY - TAKE FIVE

A. PROJECT OVERVIEW.

When they declare their concentrations, students at the University of Rochester may apply for a tuition-free fifth year in order to study subjects unrelated to their majors. Applicants are likely to be scientists, engineers, and some applied musicians, where the degree requirements allow students few chances to study in any depth other subjects of interest. Up to twenty are admitted annually.

B.-C. BACKGROUND, ORIGINS, AND PURPOSE

TAKE FIVE emerged from a 1985 institutional self-study. The University was looking for devices to integrate professional and liberal arts programs. We decided that the simplest strategy as a first step was to extend on a voluntary, cost-free basis the time to degree and to establish program guidelines that limit admission to those who want to study fields different from those defined as necessary or recommended for their chosen profession.

D.-E. PROJECT DESCRIPTIONS AND RESULTS

Students responded enthusiastically to the program's announcement. We've already had two classes of Take Fivers graduate and two more are in the pipeline. With some exceptions, we've admitted the "right" students and only six have withdrawn, in almost every case for a special opportunity. Although the program is not cost-free to students since they defer employment and are responsible for their own room and board, families have been supportive. Once the program's goal has been explained to them, prospective employers have also endorsed it. At the beginning of their fifth or post-senior year, students report missing their friends; by the year's end they report that the chance to pursue a broad education was well-worth some loneliness.

Students' study plans fit within guidelines that assure movement beyond their major discipline (e.g., chemistry) and division (e.g., natural sciences). Otherwise, they are individually tailored and are as different one from another as the students are. Some concentrate in a single area and earn a second major such as American Studies; others take a minor and a selection of related courses; still; others study a language and go abroad.

The Review Board, which admits candidates and follows their progress, is generally open to students' inventiveness and the program's advisor is forgiving when students wish to substitute one course for another. We ask only that they stay within the spirit of the original plan. We believe we are dealing with good and serious students who have made an unusual commitment, and we are prepared to let them, with our advice, define programs that suit their aims.

TAKE FIVE has been well received on and off campus. We know of one institution that has already adopted a variation on the theme, and we expect others will. It is easily replicable, provided an institution is prepared to slip students into classes without expecting them to pay tuition. Non-quantifiable benefits in the form of broadly educated alumni, a reputation for endorsing in a specific programmatic way the importance of a liberal arts education, and favorable national publicity are worth the "missing" tuition.

FIPSE REPORT

A. PROJECT OVERVIEW

The University of Rochester is offering approximately twenty students per year a ninth semester or a fifth year of study tuition-free. Students are responsible for room, board, and other fees, and they are deferring employment so the year is not entirely cost-free. Our aim is to offer a select group the opportunity to acquire a liberal education. The opportunity is particularly attractive to those in stringent BS programs.

Students apply when they have been accepted into an area of concentration, but no later than during the first semester of their junior year. They submit a list of the "extra" courses they would take if admitted to the program and explain in an essay how the proposed courses would help them meet their intellectual goals.

B-C. BACKGROUND, ORIGINS, AND PURPOSE.

In November 1985 a University-wide study group (Committee on University Goals or CUG) issued a set of recommendations for actions to strengthen educational opportunities and programs at the University. One recommendation, reproduced below, called for the establishment of a new program called TAKE FIVE.

> Given the fixed requirements in certain disciplinary programs, e.g., the engineering programs and certain science sequences, it is increasingly difficult for students to pursue a broad education or to integrate into a single course of study widely varied educational interests. CUG recommends that the University permit a number of well-qualified students with appropriate programs of study to extend their Rochester education by an additional semester or year without additional tuition cost. While it is assumed that the preponderance of the Take Five students will move from science and engineering into humanities, language, and the arts, CUG would not rule out exceptional cases in which students with strong educational directions from any area of study would be permitted an extra year. CUG recommends the immediate establishment of a committee to establish guidelines for the Take Five program and to screen candidates in the current junior class who may wish to apply for the program.

With the help of a three-year grant from FIPSE totalling $37,730, TAKE FIVE is up and running. The first "class" of students was admitted in the Spring of 1986 and applications have been solicited, received, and judged twice a year, on announced dates each fall and spring, since then.

D-E. PROJECT DESCRIPTIONS AND RESULTS

Student Profiles.

In the program's three-year history, we have received 160 applications and admitted 73 applicants. Thirty-two have completed their programs and graduated; 6 have withdrawn, and 35 are in the pipeline. Applications are due again November 1989 and the cycle will continue.

As expected, most but not all of the students are concentrating in the sciences and engineering. A consequence is that male participants predominate. Major fields of study and sex for current students and graduates are noted below.

Distribution of Admitted TAKE FIVE Students by Discipline and Sex

Discipline	Male	Female
College of Arts and Science		
Biology	3*	0
Biochemistry (Rochester Plan)	1	0
Chemistry**	1	0
Computer Science: Mathematics	2	0
Economics**	2	0
English**	1	0
History	0	1
Mathematics	1*	0
Music	2	0
Molecular Genetics (1-Rochester Plan)	3	1
Neuroscience**	3	0
Physics	2*	0
Physics/Astronomy	1	0
Psychology	2	0
Religious Studies	1*	0
College of Engineering and Applied Science		
Chemical Engineering	0	2
Electrical Engineering	11*	2
Geomechanics	2	1
Mechanical Engineering	8	1
Optics	12	2

Eastman School of Music

Applied Music: Double Bass	1	0
Applied Music: Oboe	1*	0
Applied Music: Viola	1	0
Applied Music: Violin**	2	1
Composition	1	0
School of Nursing:	0	1

* Three students earned, or expect to earn two degrees. As a result, these students have been recorded twice in this section.

** Is the discipline of a student who has withdrawn from the program.

It is harder to summarize the students' use of their extra semesters. Their programs are individually designed and are often imaginatively interdisciplinary. Even those that concentrate in a particular area may include a few courses in a very different field. It is not unusual for a student to propose earning a minor in philosophy while also taking two writing courses and two history courses, for example. With that caveat about categorizing arbitrarily their complex programs, the gist of their special registrations is noted below.

Programs of Study of TAKE FIVE Students*

A. **Formal Minors**

Minor	Frequency
Chemistry	1
Ethics	1
English Literature	1
Political Science	1
Philosophy	1
German	1
Japanese	1
Russian	1
Studio Art	2
Theater	3
Writing	1

* Because students often have multiple goals, many are listed in more than one category. Total numbers exceed enrollees.

B. **Other Programs**

Study Abroad: 18 students have or will study abroad: Italy-1; China-1; Austria-6; England-7; France-1; Spain-1; and, one student has studied in both England and Austria over the period of a year.

Certificate Programs: 4 students are earning certificates in: Asian Studies-2; International Relations-2.

Humanities: 18 are taking classes in Philosophy, Religion, and English.

Language **Study**: 13 study French, German, Spanish, Chinese, and Japanese.

The Arts: 14 take classes in music, architecture, art history, theater, and studio art.

Social Sciences: 34 take classes in Economics, Political Science, Sociology, History, Anthropology, and Psychology. One student has fashioned his own program to study American Foreign Policy and Law while a student from Taiwan, who has recently earned American citizenship, is learning about his new country through classes in American history and politics.

Natural Sciences: One student is taking classes in Astronomy; one in Geology.

These courses of study conform to a set of guidelines that students receive with their applications. They know that their proposed programs:

(1) cannot be vocational in nature but must further general educational goals;
(2) must be spread throughout their third, fourth, and fifth years at the University, not taken all at once in single semester;
(3) must have a theme rather than be a rambling sample of subjects;
(4) must include at least 4 courses above the introductory level;
(5) cannot include any courses within their concentration and can include only 2 in closely allied fields.

Students who wish to study abroad must do so before their fifth year, which has to be in residence, and students know they cannot earn another degree through TAKE FIVE unless such an intention had been declared as a freshman.** These guidelines and requirements give credence to the program's intent: to offer students, whose education might otherwise be overly narrow or specialized, an education in the liberal arts.

** Second Degree: Three students are pursuing, or have earned a double degree:
B.M. - AMU Oboe and B.A. in Biology
B.S. in Physics and B.A. in Mathematics
B.S. Electrical Engineering and B.A. Religious Studies

Administration

The program demands the time of faculty members and administrators. Students consult faculty members and advisors as they prepare their applications, and the process does require a letter of recommendation from a faculty member. The academic advising staff and the staff of Career Planning and Placement are involved at the beginning and the end of the process respectively. There is a Board, made up of faculty members, a student, and an administrator, that reviews applications, recommends admission, and handles special cases, and there is an administrator with supervisory responsibility for the program. She in turn delegates daily advising and administrative tasks like record keeping to a member of her staff, who spends approximately 10% of his time on the program.

Still, implementation of the program has not required new dollars. The FIPSE grant has paid for the necessary modifications to the University Student Information System, the training of staff and the initial printing of brochures and applications. The tuition-free additional year is in reality cost-free to the University. Because we cap the number of students admitted annually and can slip them into upper-level courses already on the books, there are no new expenses involved with their matriculation.

The University is committed to absorbing the hidden costs (time) and the minor real costs (printing) in order to continue the program.

Replicability

The program can be copied by other institutions, assuming that they too are willing to allow registrations for which there are no corresponding income benefits. There are other benefits. Students relish the program's possibilities for enlarging their educational opportunities. Even those who do not apply speak favorably about TAKE FIVE. They like being affiliated with an institution that believes so strongly in the importance of a broad education that it will offer selected students a cost-free program to achieve that end. Prospective students, their parents, and their high school guidance counselors also note the program and mention it frequently when tallying Rochester's many virtues.

Publicity

On campus the program is well known. A brochure describing the program and the application process is readily available to interested applicants. (Appendix A) If there is criticism, it is that the program is small and that the admission criteria favor scientists and engineers.

Off campus the program has been well publicized. In its first year we distributed the descriptive brochure to all engineering schools in the country. That generated a few inquiries

but no programs. A talk by the program's administrative dean at the 1988 AAC/ABET Conference on the liberal arts and engineering produced more enthusiasm, some inquiries, but also no known follow through to date.

In March 1989 a writer for the New York Times asked to spend a day on campus interviewing people connected with the program. Her article (Appendix B) extensively quoted students enrolled in the program and captured their enthusiasm for TAKE FIVE. Telephone calls from administrators and students at other institutions came quickly, and the distribution of a reprint of the article to all engineering schools produced even more inquiries. The uniqueness of TAKE FIVE is fading. DePauw University has implemented a variation on the theme, and at least two other institutions seem close to doing so also.

Assessment and Further Actions

No program is trouble-free or unimprovable. The program's designers never assumed that admission should be reserved for only the star performers, but we do want to be sure that good students consider the program. To attract them we intend during the year and in future years to:

(1) run an information panel of deans, advisors, and students prior to the application deadline;
(2) produce and distribute a poster, generic for annual use, advertising the program (Appendix C);
(3) distribute the program's brochure to new faculty members to be sure they know it and recommend it to good students;
(4) insert on the student's "declaration of concentration" form a reminder to think about the program as they plan their remaining years at the University.

Our annual end-of-year gathering with graduates has revealed petty problems such as hassles at the postoffice when students wish to retain their mailboxes for a fifth year. More serious was a report from two students that professors in their major field ostracized them for "defecting" to another field of study. A few faculty members expect single-minded devotion to their field and wish students to stay on the fast track toward professional expertise in that field. To handle these problems we intend during the year to:

(1) issue a report to the faculty about TAKE FIVE and its alumni; none has changed fields because of expanding their studies into other fields;
(2) distribute a TAKE FIVE Manual of Procedures to staff across the University who may not be familiar with the needs of fifth year students;
(3) increase opportunities for TAKE FIVERS to be in touch with one another in order to create a sense of community and joint-problem solving.

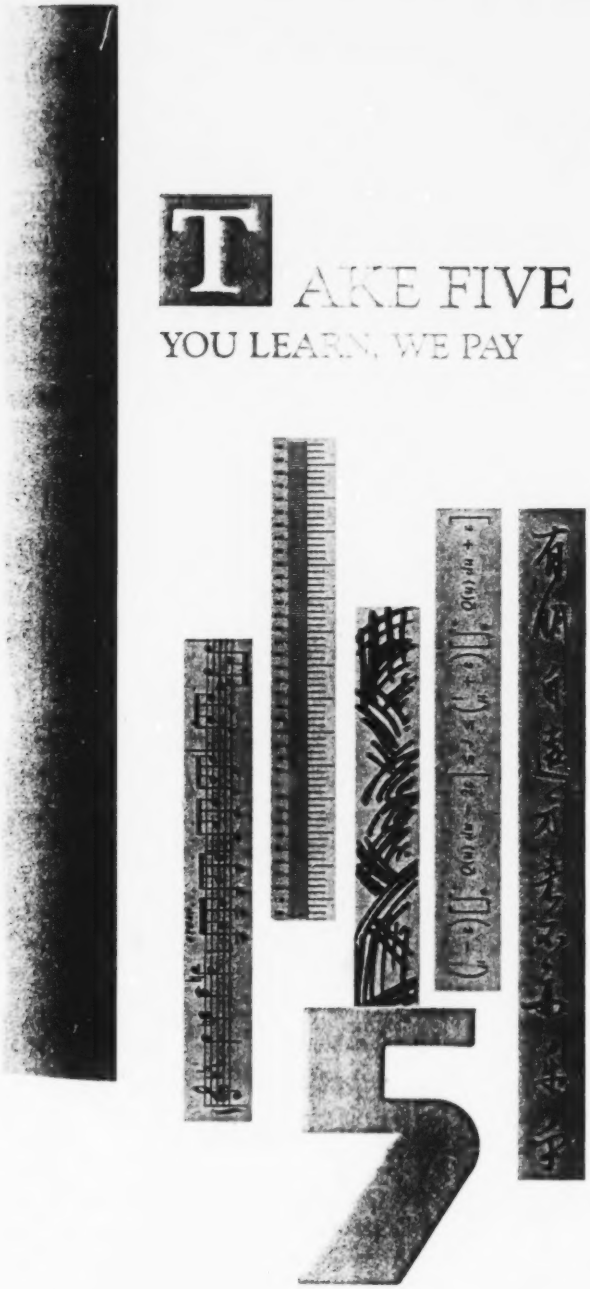
F. SUMMARY AND CONCLUSIONS

An assessment of any student program could report anecdotes, uplifting and troubling. We have met serious students who loved having an extra year to sample the University's resources and discover their own talents. We have also met students in the wrong major, pressured by family to stay there and trying to use TAKE FIVE as a means to study something they are sorry isn't their major. Fortunately, the former predominate. We have met students exhilarated by their discovery that they can handle subjects new to them and compete well with students majoring in those fields, and we have met students whose performance in new fields met neither their standards nor ours. Again, the former far exceed the latter. We have met students who threw themselves into new situations, such as going abroad, learning the language, and upon graduation taking an engineering position in the foreign country. We've also met students who were less adventuresome. In short, TAKE FIVERS vary and have individual stories to tell about their experiences. We've provided a framework for them to fill in. As you would expect with good students, the details differ. Enthusiasm for learning, a sense of inquiry and resourcefulness characterize the best. The admissions board is getting better at spotting the best and TAKE FIVERS have an air of earnestness and purposefulness about them.

Financial Report

The funds were used as anticipated but for minor shifts of surpluses in some categories into printing and publications. The shifts had no effect on the initial program, which has been implemented as originally planned.

October 1989
RF/ac



TAKE FIVE

YOU LEARN, WE PAY

UNIVERSITY OF
ROCHESTER

Four years ago, when I made the decision to study engineering, I had no way of knowing if it was the right field for me or if I might be happier as a philosophy major. "Take Five" allowed me extra time to look into new fields and disciplines, see a new part of the world, and to graduate a more complete person. A summer of travel in Europe and a semester of study in London have sparked an interest to see more of the world, and I recently applied to the Peace Corps. I hope to use my engineering degree in a practical way in a foreign culture. Looking beyond, I would like to study architecture, with hopes that I can marry my interests in design aesthetics and engineering.

Alexander Cox, mechanical engineering major

My intellectual interests have expanded and developed far beyond optical engineering. My courses in philosophy and religion have probably raised more questions than they have answered, which is not entirely a bad thing. That just means my education will continue after graduation. During my extra year here I have made many new friends, some close. As a resident advisor, I have learned much about myself and others; it is no small task to forge a community of 30 people. "Take Five" has been nothing but good for me.

John Freymann, optics major

As a high school senior, I had decided that, given my interests in math and science, I would study engineering at college. At the same time, I wanted to obtain a well-rounded education with courses in the liberal arts. "Take Five" gave me the opportunity to complete my college education as I intended. The program allowed me to explore interests in philosophy and American history, and has been very beneficial in developing my writing skills (I have written more papers in this past year than in the four previous years combined!).

Timothy Henkels, electrical engineering major

The courses in U.S. history I've taken during my "Take Five" year have made me more interested in that topic, rather than merely satisfying some intellectual thirst. I've even thought about going to graduate school in history, though for now I've accepted a job at IBM working in solid state electronics. I had a lot of fun my fifth year here, and I really feel that my undergraduate education is complete in a way it could never have been without the extra year.

James Duff, electrical engineering major

"Take Five" has allowed me to take courses I never would have had time for otherwise. I am now planning to pursue a graduate degree in environmental policy and I can safely say that without the opportunity to take courses in political science and realize an interest and aptitude for the subject, I would not have considered this path feasible.

Barbara J. Rich, geomechanics major

I feel very privileged that I was able to take part in the "Take Five" program. The ability to spread out my electrical engineering courses over five years, and to take intellectually stimulating courses outside engineering, has been essential for attaining what I feel has been a complete education.

Robert M. Margolis, electrical engineering major

"Take Five" has added to my intellectual interests. Through working towards the Certificate in International Relations I have become much more interested in politics, public speaking and culture.

Brian Weinberg, optics major

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QUESTIONS AND ANSWERS ABOUT "TAKE FIVE"

Q. *Who may apply?*

A. "Take Five" is open to undergraduates enrolled in the College of Arts and Science, the College of Engineering and Applied Science, the School of Nursing, and the Eastman School of Music.

Q. *Is there a minimum grade-point average to qualify for "Take Five"?*

A. No. What "counts" is the intellectual merit of your proposal and the persuasiveness of your essay in describing the goals you wish to accomplish through an additional semester or year of study.

Q. *When should I apply?*

A. As soon as you have been accepted into a major and *no later* than the second semester of your junior year. Eastman School students, however, are encouraged to apply during their sophomore year and *no later* than first semester of their junior year. If you apply in the fall semester, submit your completed application to your Academic Advising Office by the first Tuesday after Thanksgiving. In the spring, applications should be submitted by the first Tuesday after Spring Break.

Q. *Where do I get application forms?*

A. Application forms have been prepared that reflect each school or college's basic requirements and the requirements of your concentration. Forms are available at the Academic Advising Office, 312 Lattimore Hall, University of Rochester, Rochester, NY 14627, or you may obtain the application appropriate for your school or college in the administrative offices at the School of Nursing, Eastman School of Music, and the College of Engineering and Applied Science.

Q. *Who will advise me through the application process?*

A. Discussion should take place *before* you write your application with the academic advisors in your school, college, or the Advising Office in Lattimore Hall, as well as with your faculty advisor. They will talk with you about your proposed "Take Five" program as well as provide helpful advice on completing the application.

Q. *What happens after I apply?*

A. A group of faculty members, administrators, and students meets to evaluate the educational soundness of your proposal. Admission to "Take Five" is limited to approximately 20 students annually and numerical constraints may mean that not all good applications will be accepted. You will receive notification of the Review Board's decision before the next semester begins.

Q. *Where can I get more information?*

A. Call the Academic Advising Office (716-275-2354) or contact the administrative offices in the School of Nursing, Eastman School of Music, and the College of Engineering and Applied Science.

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